

RESEARCH PLAN



Linda Jones



*Northwest
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Center*

Research Needs:

Taxonomy

- Current Research
 - Genetic analyses of existing biopsy samples
 - Genetic and skull analyses of museum samples
- Future Research
 - Co sponsor international symposium on **Cetacean Systematics: Meeting the Needs of Conservation and Management**



Risk Factors

- Prey availability
- Environmental contaminants
- Acoustic and vessel disturbance
- Factors on the winter grounds
- Disease and predation
- Oil spills
- Current impacts of past events
- Harmful algal blooms
- Commercial fisheries



Research Needs:

- *Ecosystem Relationships*

- What are southern residents eating?
- What is the seasonal variation in prey?
- Are recent demographic trends in southern resident killer whales consistent with nutritional limitation, contaminant stress, or both?

- Current Research:

- GIS analyses of historical salmon and killer whale data
- Stable isotope/fatty acid analyses



Research Needs:

- *Anthropogenic Effects*

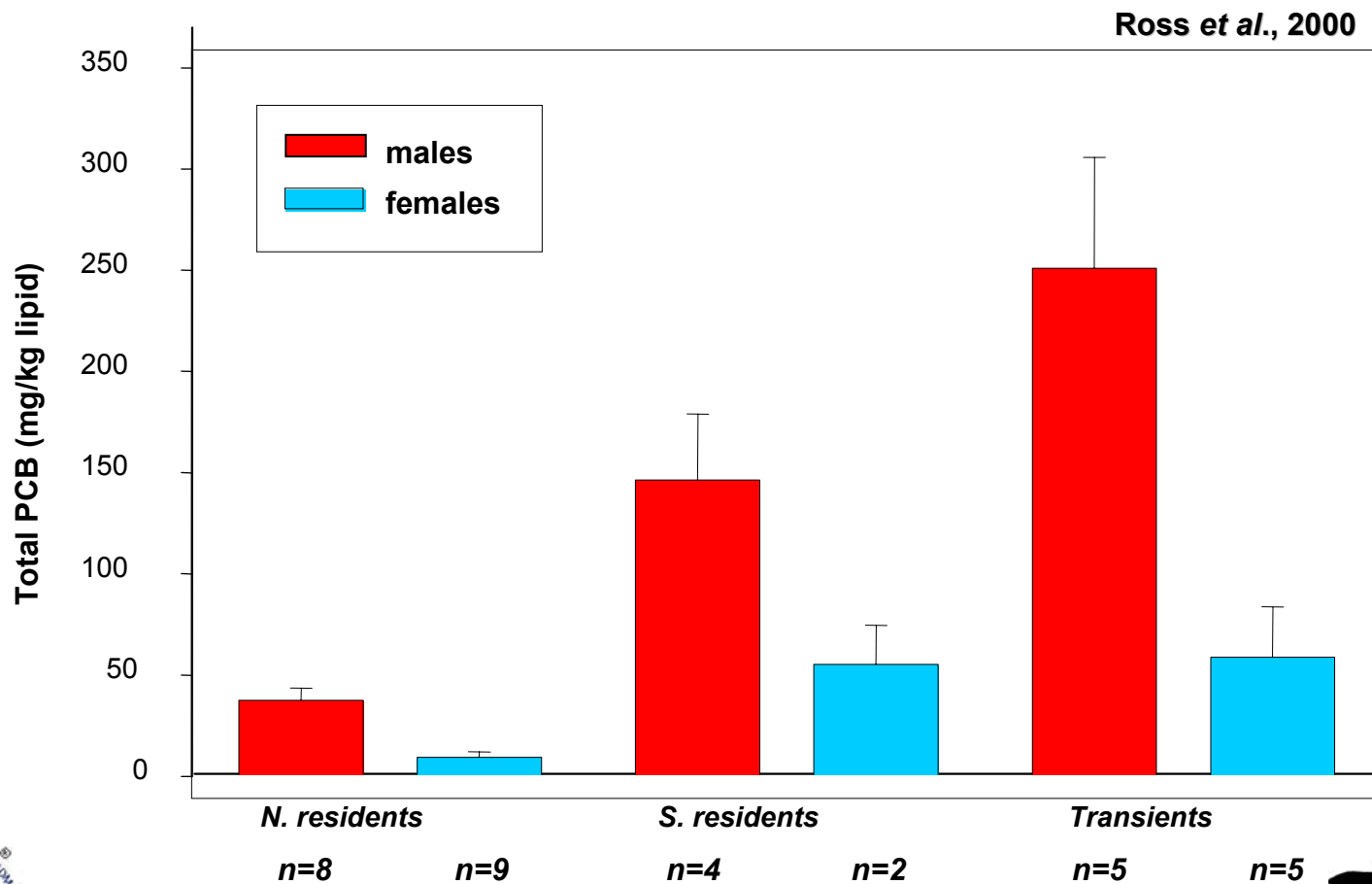
- **Toxic Contaminants:** Need information on sources, and levels; risk modeling
- **How do contaminant concentrations and patterns vary among killer whale prey species at different locations?**

- **Current Research:**

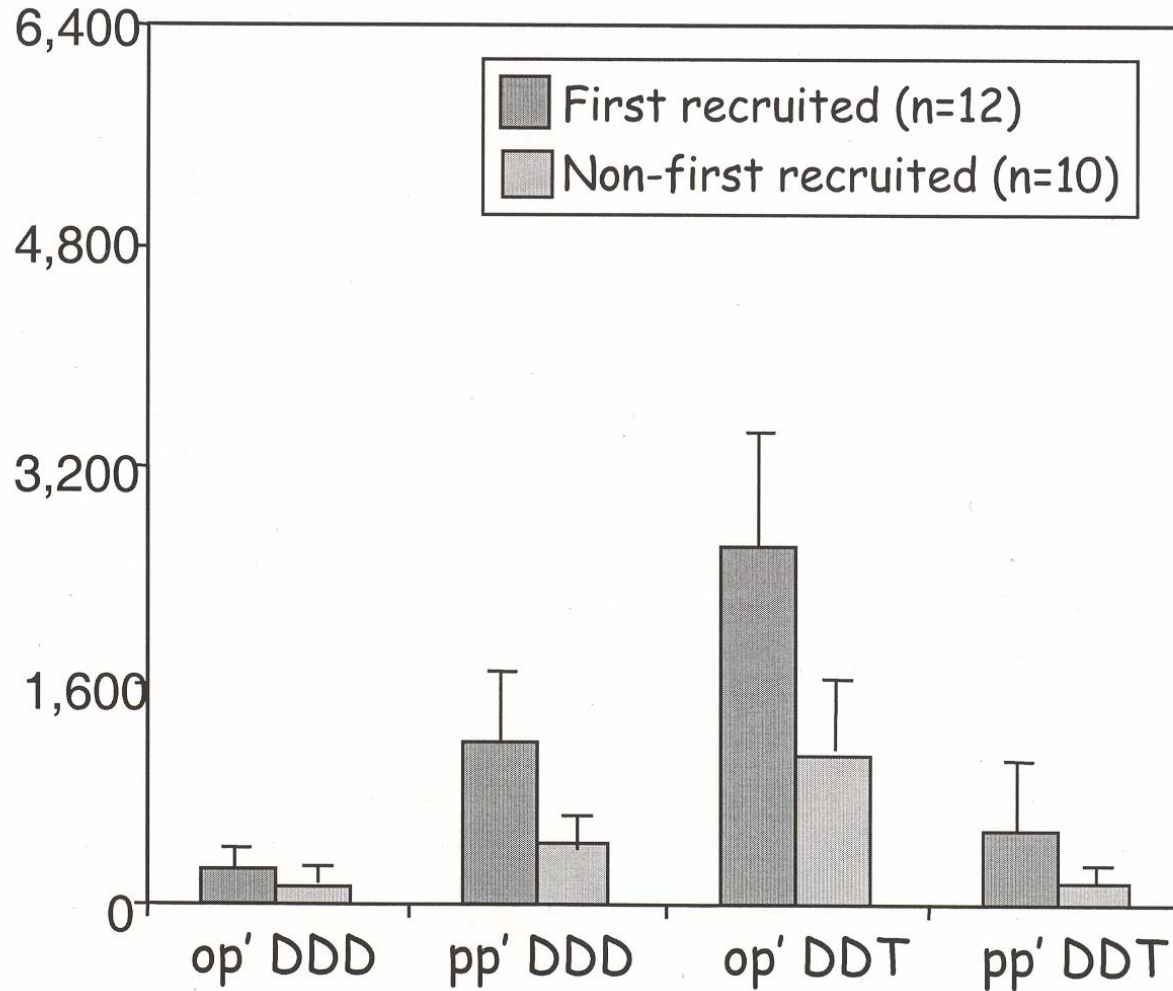
- **Completed contaminant analyses of existing killer whale samples**



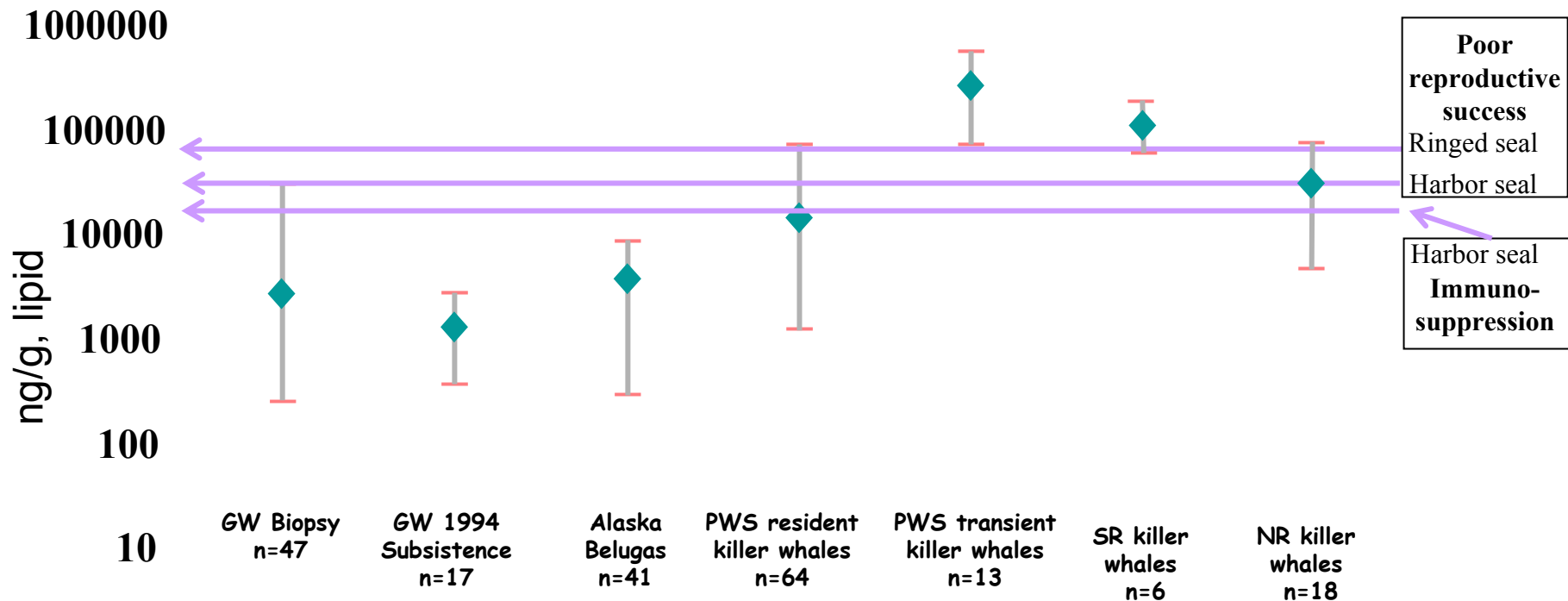
Σ PCBs: Southern and Northern Residents vs Transients



Adult male Residents: DDTs vs recruitment order



Σ PCBs in blubber of marine mammals compared to toxic levels



Research Needs:

- **Vessel Noise and Presence Effects**
 - **What are the baseline acoustic conditions and spectral characteristics of vessel noise near whales?**
 - **How do vessels affect whales ability to forage?**
 - **How are habitat use and behavioral energetics of the southern residents affected by vessel activity?**

Research Needs:

- *Distribution*

- Determine winter range of SRs
- What habitats in Puget Sound area are important to SRs?

- Current Research:

- Groundfish fishery observers
- Marina posters
- Web announcements
- Coast Guard and NMFS enforcement flights
- Research cruises



Historic and Outside Sightings

Season

-  Fall
-  Spring
-  Summer
-  Winter

